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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,207	04/16/2004	Jerry H.C. Lee	25341A	1155

22889 7590 03/28/2006

OWENS CORNING  
2790 COLUMBUS ROAD  
GRANVILLE, OH 43023

EXAMINER
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MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/826,207	LEE ET AL.	
	Examiner	Art Unit	
	Matthew D. Matzek	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-15 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15 and 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/7/05</u>   | 6) <input type="checkbox"/> Other: _____                                    |

*Response to Amendment*

1. The Amendment dated 1/19/2006 has been fully considered and entered into the Record. Claims 4 and 16 have been canceled and new claims 22 and 23 have been added. Claims 1-3, 5-15 and 17-23 are currently active.
2. The declaration under 37 CFR 1.132 filed 1/19/2006 is insufficient to overcome the rejection of claims 1, 3, 5-8 and 2, 9-15, 17-21 based upon 35 U.S.C. 103 (a) in view of Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563) and Miller et al. in view (US 6,228,785) Marzocchi et al. (US 4,265,563) and further view of Williams et al. (US 4,210,459), respectively, as set forth in the last Office action because: it fails to set forth facts germane to the rejection at issue.
3. The declaration states that it is unreasonable to presume that Marzocchi et al. provide for an increased roof covering strength of at least about 5% as measured by ASTM D 1922. The declaration continues by stating that the presumption is incorrect because Marzocchi et al. do not include a roofing mat formed from fibers, but rather it includes discrete flakes of glass dispersed in the asphalt. Therefore, there is nothing like a roofing mat to hold it together and keep it from tearing and the composition of Marzocchi et al. can not be tested for tear strength using ASTM D 1922.
4. Applicant is directed to section 1 of the Office Action dated 10/19/2005 which relies upon the teachings of Miller et al. as a primary reference and the Marzocchi et al. as a secondary reference. The Miller et al. reference provides the instantly claimed structure. The Marzocchi et al. reference has been relied upon for teaching of a silane-sizing agent for the glass fibers in asphalt. The combined article would have glass fibers with the silane-sizing agent in asphalt.

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5. The declaration states that it is unreasonable to presume that Williams et al. provide for an increased roof covering strength of at least about 5% as measured by ASTM D 1922. The declaration continues by stating that the presumption is incorrect because Williams et al. do not suggest that there is an improvement in tear strength and that the articles disclosed are either flowable or so hard that tearing is not an issue. The declaration continues that the reference does not provide for articles that can be tested for tear strength using ASTM D 1922.

6. Applicant is directed to section 2 of the Office Action dated 10/19/2005 which relies upon the teachings of Miller et al. as a primary reference and the Williams et al. as a secondary reference. The Miller et al. reference provides the instantly claimed structure. The Williams et al. reference has been relied upon for teaching of a sulfide silane coupling-agent for the glass fibers in asphalt. The combined article would have glass fibers with the silane-sizing agent in asphalt.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 5-8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563).

a. Miller et al. teach an asphalt-based roofing material comprising a substrate coated with asphalt (Abstract). The roofing material comprises a glass fiber substrate coated with asphalt and a surface layer of granules embedded in the asphalt coating (col. 1, lines

13-20). Miller et al. is silent as to use of a silane-sizing agent for the glass fibers in the asphalt.

b. Marzocchi et al. teach that glass fibers may be used as reinforcement in resins, rubbers, and asphalt (organic material) for use in roads, driveways, bridges, walks and roofs (col. 2, lines 10-20). The glass fibers may be treated with a silane coupling (sizing) composition along with sulfur leaving secondary or primary as well as elemental sulfur dispersed on the surface of the glass fibers (col. 9, lines 35-43). When added to a resin system (asphalt, tar, etc.) the glass fibers become directly bonded to the resin phase to improve strength and impermeability of the properties of the matrix (col. 9, lines 43-50). The sulfur content of the silane coating may be from 0.05 to 40% with a preference from 0.1 to 7% (col. 9, lines 54-59). Overlying the substrate layer 1 (fiberglass) is a wear course 2 comprising an aggregate and asphalt mixture (col. 4, lines 3-5). The asphalt aggregate may comprise clays, gravel, glass flake or calcium carbonate (col. 4, lines 53-69). In one embodiment an asphaltic, glass flake layer is added on top of the substrate (fiber/asphalt) layer (col. 5, lines 55-63).

c. Since Miller et al. and Marzocchi et al. are from the same field of endeavor (i.e. asphalt covered fiber glass building materials), the purpose disclosed by Marzocchi et al. would have been recognized in the pertinent art of Miller et al.

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the glass fiber mat of the composite of Miller et al. with the silane sizing agent with the motivation of improving the adhesion between the fiber glass and asphalt phases.

- e. Although Miller et al. nor Marzocchi et al. explicitly teach the claimed feature of forming cross-links between the sulfur groups and the organic material, the claimed tear strength or the claimed tensile strength, it is reasonable to presume that said properties are inherent to Marzocchi et al. Support for said presumption is found in the use of like materials (i.e. glass fibers sized with a sulfurous silane composition and coated with an organic material). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of claims 1, 6 and 22 would obviously have been present one the Marzocchi et al. product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80.
8. Claims 2, 9-15, 17-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563) as applied to claim 1 above, and further in view of Williams et al. (US 4,210,459). While Marzocchi et al. teach silane coupling agents for the glass fibers it is silent as to use of a sulfide silane.
- a. Williams et al. teach the use of a polysulfide silane coupling (sizing) agent for glass fibers in rubber composites (Abstract). The coupling agent may also comprise vinyl groups, yielding a vinyl silane (col. 4, lines 13-40). It is generally preferred to size the fibers prior to their incorporation into the composite (col. 14, lines 48-60). The polysulfide organosilicon coupling agent may also be added to the rubber matrix and the sulfur concentration may be from about 0.5 to 4 weight percent of said matrix (col. 13, lines 47-52 and col. 14, lines 24-28).

b. Since Miller et al. and Williams et al. and from the same field of endeavor, (i.e. fiber glass in organic matrices), the purpose disclosed by Williams et al. would have been recognized in the pertinent art of Miller et al. and Marzocchi et al.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the sulfide silane coupling agent of Williams et al. motivated by the desire of simplifying the coating of the glass fibers to one chemical treatment and to improve the strength of the resin phase with the addition of the polysulfide silane.

d. Although Miller et al. nor Williams et al. explicitly teach the claimed feature of forming cross-links between the between the sulfur groups and the organic material, double-bonds, the claimed tear strength or the claimed tensile strength, it is reasonable to presume that said properties are inherent to Williams et al. Support for said presumption is found in the use of like materials (i.e. glass fibers sized with a sulfurous silane composition and coated with an organic material). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of claims 9, 18 and 23 would obviously have been present one the Williams et al. product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80.

e. Claim 10 is rejected as the polysulfide silane disclosed by Williams et al. possesses sulfur and vinyl groups (col. 4, lines 18-34).

f. Claim 14 is rejected as the combination of the instantly applied art yields an article that is compositionally and structurally the same as that of Applicant.

g. Claims 19 and 20 are rejected as the amount of sulfur instantly applied meets the limitations of claims 19 and 20 and provides the bonding between the glass fibers and the asphaltic matrix (col. 14, lines 24-34).

***Response to Arguments***

9. Applicant's arguments filed 1/19/2006 have been fully considered but they are not persuasive.

10. The arguments set forth in the 1.132 Declaration have been addressed supra.

11. Applicant argues that it would have not been obvious to modify the glass fiber mat of Miller et al. with the sizing agent of Marzocchi et al. based upon Miller et al.'s lack of suggestion for improved adhesion between the glass fiber mat and the asphalt-based coating. Applicant continues by stating that Marzocchi et al. fail to teach that the coupling agent would be useful in a roof covering to improve the bond between a roofing mat and a coating material and the reference also fails to teach a coupling agent would be useful for improving the tear strength of a roof covering.

12. The Marzocchi et al. reference teaches that the emphasis of the invention is to improve the interface between asphalt aggregate surfaces (asphalt-based coating material) and the substrate layer (glass fiber layer) (col. 1, lines 6-10). This may be done by treating glass surface with a mixture of amino silane and elemental sulfur (col. 1, lines 65-68). The reference continues by teaching the adhesion between the asphalt layer and a glass fiber mat may be affected by the use of a silane-coupling agent (col. 8, lines 43-51). The surface treatment of the fibers with silane will enhance the reinforcement properties and enhance the reinforcement properties, thus protecting the asphalt matrix and the glass fiber substrate below (col. 8, lines 56-



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65) in the same manner as it enhances the adhesion between the glass flake and the asphalt matrix. This provides the motivation to use the coupling agent of Marzocchi et al. in combination with the Miller et al. invention, even though Marzocchi et al. do not specifically mention increasing the tear strength of roofing mats. Marzocchi et al. acknowledge the use of glass fibers along with asphalt matrices (col. 2, lines 12-20).

13. Applicant argues that it would have not been obvious to modify the glass fiber mat of Miller et al. with the sizing agent of Williams et al. based upon Miller et al.'s lack of suggestion for improved adhesion between the glass fiber mat and the asphalt-based coating. Applicant continues by stating that Williams et al. fail to teach that the coupling agent would be useful in a roof covering to improve the bond between a roofing mat and a coating material and the reference also fails to teach a coupling agent would be useful for improving the tear strength of a roof covering.

14. The Williams et al. reference teach the adhesion improvement between a rubber phase and glass fibers (Abstract and col. 14, lines 47-52). The reference fails to specifically mention that the use of the coupling agent in conjunction with glass fibers and a rubber matrix would improve its tear strength, however as the increased tear strength is an inherent result when the adhesion between matrix and fiber phases of a composite. The motivation to combine the Miller et al. and Williams et al. references is provided by Williams et al. in that the coupling agent improves the adhesion between an inorganic substrate (glass fibers) and an organic polymer (asphalt) (col. 1, lines 20-24).

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***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdm

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*Nor*  
**NORCATORRES**  
**PRIMARY EXAMINER**